



US 20210317500A1

(19) **United States**(12) **Patent Application Publication**  
**CHOO et al.**(10) **Pub. No.: US 2021/0317500 A1**(43) **Pub. Date: Oct. 14, 2021**(54) **SYSTEMS AND METHODS FOR  
PRODUCTION OF RECOMBINANT IL-11 IN  
YEAST**(71) Applicant: **Nansha Biologics (Hong Kong)  
Limited, Central (HK)**(72) Inventors: **Qui-Lim CHOO**, El Cerrito, CA (US);  
**Manson FOK**, The Peak (HK);  
**Johnson Yiu-Nam LAU**, Houston, TX  
(US)(21) Appl. No.: **16/478,108**(22) PCT Filed: **Jan. 15, 2018**(86) PCT No.: **PCT/US2018/013708**

§ 371 (c)(1),

(2) Date: **Jul. 15, 2019****Related U.S. Application Data**(60) Provisional application No. 62/446,762, filed on Jan.  
16, 2017.**Publication Classification**(51) **Int. Cl.****C12P 21/02** (2006.01)**C07K 14/54** (2006.01)(52) **U.S. Cl.**CPC ..... **C12P 21/02** (2013.01); **C07K 14/5431**  
(2013.01)

(57)

**ABSTRACT**

Recombinant IL-11 is expressed in yeast, then isolated from aerobic fermentation media by precipitation, solubilization of the precipitate in the presence of a denaturant, and renaturation of the solubilized protein. Renatured rhIL-11 is further purified by cation exchange and hydrophobic interaction chromatography to provide a highly purified rhIL-11 with high biological activity and low rhIL-11 dimer and oxidized rhIL-11 content.

